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CRIME ANALYSIS IN AMERICA: FINDINGS AND RECOMMENDATIONS





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Overview

Organizations must adapt to survive. Like all organizations, police departments must adjust their administrative arrangements to accommodate shifts in social, economic, and political conditions. While adjustments are usually incremental, sometimes change is dramatic. American policing changed radically at two points in its history, and both instances led to a dramatic and far-reaching transformation in police operations and management (Kelling and Moore 1991). The first shift came in the early 20th century, when the professional model appeared. The second can be traced to the mid-1980s, when the idea of community policing began to attract serious attention. One important change associated with community policing that we address here is the importance that data and analysis have assumed in police operations.

One area of police operations that has been particularly affected by the shift to community policing is information processing and crime analysis. Community policing does not break from professional policing because it demands information. Both models obviously rely on the acquisition and analysis of information to make informed decisions. Community policing can be distinguished from professional policing because it calls for information from domains that had previously been neglected and for more complex analysis of that information. The philosophical shift that accompanies the transition from professional to community policing opens new domains of information and expands many that already exist. Community

policing emphasizes the analysis of data to examine the nature of complex community problems and to evaluate the effectiveness of crime reduction efforts.

For all practical purposes, the professional police system was closed. Community policing takes a contrary position: democracy demands that law enforcement policy reflect the interests of external stakeholders (e.g., elected officials, citizens, agencies related to the police mission, etc.). Aggregating these interests,

examining the nature and make-up of community problems, and translating them into police policy places greater demands on the information processing operations of the department. Communication is primarily one direction under professional policing. Departmental policy is formed at the top of the organizational structure and filtered downward in the

form of standard operating procedures. Policymaking power is not shared, but centralized. Here too, the community policing model calls for an open system: all members of the organization at all levels participate in the policymaking process. Community policing operations that follow from these philosophical shifts, such as customer and officer surveys, new performance measures, community partnerships, strategic planning, etc., require substantially more data from substantially more sources that often must be analyzed via substantially more complex methodologies.

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The primary operational goal of professional policing is reactive crime control. Community policing, in contrast, places a high value on proactive policing focused on problem solving. Officers are encouraged to systematically scan police data, analyze it to discover problems and their causes, design responses, and assess them. The ultimate goal is to go beyond crime control and deliver a broad range of services that improve the community's general quality of life. This encourages police departments to engage in complex problem analysis that moves beyond traditional crime analysis. Problem analysis examines the nature of community problems and combines traditional crime analysis with more complex social science research methods. This type of analysis aims to do more than simply apprehend offenders or identify high problem neighborhoods. It seeks to examine the causes of problems and ideally offers potential solutions to them derived from this analysis. Clearly this type of activity places serious demands on the information processing abilities of law enforcement agencies and personnel.

Police executives are acutely aware of the additional information demands that community policing creates. Fortunately, support has come in several forms. Federal authorities have actively supported community policing, especially when it comes to information processing. For example, since the Office of Community Oriented Policing Services (COPS) was formed in 1994, information technology awards to state and local law enforcement

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agencies have exceeded one billion dollars (Abt Associates, 2000). Computer hardware and software technology has also improved considerably over the past fifteen years. Systems currently are less expensive to purchase and operate, their operation

requires less technical skill, the data are more accessible, and their output is more intuitive (e.g., crime maps). The combination of money and improved technology has vastly improved law enforcement's information processing capacity, but this improved technological capability does not necessarily translate into more complex data analysis.

Police crime analysis operations consist of three essential functions.

- (1) Assess the nature, extent, and distribution of crime in order to efficiently and effectively allocate resources and deploy personnel.
- (2) Identify crime-suspect correlations to assist investigations.
- (3) Identify the conditions that facilitate crime and incivility so that policymakers may make informed decisions about prevention approaches (Reuland, 1997).

Community policing involves a shift in what has been the traditional focus of crime analysts. It involves increased focus on identifying the underlying causes of chronic crime problems, developing responses that are linked to this analysis and assessing the effectiveness of those responses.



The Project

This guide is a product of the findings of a recent study that examined key aspects of crime analysis. In 2000, the University of South Alabama's Center for Public Policy conducted an extensive study of crime analysis operations in American law enforcement agencies. The project consisted of two national surveys and site visits. Researchers first surveyed all American law enforcement agencies with 100 or more sworn personnel. Nearly 65 percent of the 859 agencies responded to the survey. Researchers then surveyed a random stratified sample (by size and region) of 800 law enforcement agencies with fewer than 100 sworn personnel.

The second phase of the project took a more in-depth look at crime analysis operations across the country in the "large" departments.

Data were drawn from telephone interviews with forty crime analysts and from site visits to nine crime analysis units. The analysts interviewed and the sites visited were chosen to best explore what we believed to be an objectively determined select group of crime analysis operations.

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This project initially sought to produce a guide that would briefly describe the operations of an "ideal" crime analysis unit. This was based on the hypothesis that over the past 10 to 15 years police departments had made remarkable strides forward in developing this specialized police function and in moving it towards more complex problem analysis activities. Producing a guide that represented a composite of the

"best of the best" would be a useful tool for any department that wished to improve its crime analysis operations. This, however, was not to be. A different story emerged from the findings; while it was not what was originally hoped for, it was nevertheless interesting and useful to police administrators.

This guide is intended to inform police managers of the structural issues to address when considering a crime analysis function. It is also intended to expose the current limitations of crime analysis and the policies that those findings imply. For a more detailed description of the project findings, please consult the full project report, which can be obtained from COPS Online at www.cops.usdoj.gov.



Findings

A shift in police operations, in this case crime analysis, should have followed from the shift in philosophy. Community policing calls for a change in the police paradigm. It would, if adopted, call for expanded information domains and a more elaborate and problem-oriented analysis of those data. The sorts of data that are collected and the ways in which they are analyzed are closely related to the reigning paradigm. If police operations and management are designed to identify and apprehend offenders, then the demand for data analysis will conform to that limited philosophy. If, on the other hand, a broader mission and vision is developed, one that seeks to better understand the complex nature of the criminal incident, then the form of and demand for data analysis will change accordingly as will the function of crime analysts.

In nearly every instance, we found analysts that were being asked to direct their efforts to focus narrowly on the apprehension of offenders

or possibly on the identification of high crime areas. Crime control, narrowly defined as the identification and apprehension of offenders, dominated the demand for crime analysis. This would

suggest that police operations continue to fundamentally reflect the professional policing model. Police managers insisted that crime analysis should concentrate on tactical operations (i.e., support efforts that can be directly linked to "catching the bad guy") and not on the analysis of underlying community problems. No one would argue that these analytic activities are not important. One might have reasonably anticipated, however, a broader and deeper range of crime analytic activities and output, possibly focused on identifying the underlying causes of broader community problems.

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Organizational Dynamics

Specialization

Crime analysis has evolved into a specialized unit in American policing. Nearly 75 percent of the police departments surveyed reported having specialized crime analysts. Of those that have a crime analyst specialist, nearly 75 percent said that the analyst was assigned to a separate unit. Some have argued that greater efforts should be directed toward pushing data to the end users (i.e., beat officers and detectives) in a fashion that facilitates analysis at the lowest levels; others argue that pulling data to a specialized unit and conducting the analysis there is more efficient and more effective. This is a legitimate issue for police executives to consider; it has generally not been one that police policymakers have addressed.

Although the trend toward specialization is clear, never assume that functionally differentiated crime analysis is the most appropriate option. Some departments may choose to rely on technology to help department members to do their own analysis (e.g., Chicago Police Department's Information Collection for Automated Mapping (ICAM)). Other departments may choose to designate a person or unit to conduct the analysis. Police administrators will have to decide which approach is more in keeping with their particular organizational philosophy and technological capacity.

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Line and Staff

The role that a functionally differentiated unit should play, either staff or line, is an important aspect of organizational dynamics. Both executives and members of the unit, view crime analysis units as a support and advisory function to line members. This is not in question. The question is not whether crime analysis should be a staff function; the question is rather to what end the staff function should be directed. The findings overwhelmingly suggest that crime analysts value tactical analysis (that supports short-range planning, primarily interested in crime control activities) over strategic analysis (that supports long-range planning, primarily interested in more complex organizational issues that involve departmental strengths, weaknesses, opportunities, and threats) or problem analysis (that supports the identification and response to persistent community problems). Managers seem to share that view, even though most crime analysis units are under the authority of administrative divisions.

The rather single-minded focus on tactical analysis is troublesome on several levels. First, tactical crime analysis has developed into a specialization because it requires technical skills and training that the ordinary sworn member does not have. After all, organizational complexity is what drives specialization. However, hardware and software technology is moving toward more



user-friendly applications. As time passes, the computer literacy of people entering the police field is increasing. One would expect that these changes should reduce the need for tactical analysis (at least as it is currently defined) to be performed by "experts." As the need for tactical support decreases, so does the need for a functionally differentiated unit that narrowly defines its mission as one of support for tactical operations. Second, current thinking about police administration stresses the importance of strategic management, which demands substantially higher levels of strategic intelligence (e.g., stakeholder assessments, forecasting, policy evaluation, performance measurement, organizational intelligence, citizen surveys, etc.). It should not be unreasonable to expect a crime analyst to possess the necessary technical skills and training (e.g., advanced research design and methods, statistics, survey research, program evaluation, organizational behavior, etc.) to perform tasks associated with strategic or problem analysis. Granted, it is more than what is now expected of crime analysts.

The need for lowerlevel technician skills (e.g., generating point maps, creating crime bulletins, etc.) is decreasing because of more intuitive software and the increased computer literacy of officers. Thus, the need for specialization may well evaporate over time. It may be necessary to redefine the role assigned to crime analysts.

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Centralization

The question of centralization in the crime analysis context arises when a functionally differentiated unit is formed with multiple members that delivers crime analysis support to multiple dispersed units. The question becomes whether crime analysis operations should have an independent and distinct chain of command (centralized), or whether its members should be embedded in the chain of command within the dispersed units that they support and into which they are physically assigned (decentralized). For example, should a crime analyst assigned to support a precinct station fall within the precinct station chain of command, and thereby under its authority, or should the crime analyst fall within a departmentwide crime analysis unit chain of command and ultimately be responsible to the crime analysis operations manager?

Frequently when the unit is decentralized, a central crime analysis authority remains; thus, the principle of unity of command is violated. Many of the departments that we visited and interviewed by phone followed this practice, arguing that a centralized line of authority was needed, but it was impossible to ignore the local command structure. To do so, they insisted, would damage the relationship between crime analysis and target. Often, according to respondents, this hybrid decentralization arrangement leads to situations in which the crime analysis unit mission is subordinated to a variety of questionable, and at times trivial, needs of the target superior.



The findings suggest that a crime analysis unit, when it is multimember and when it supports multiple targets, should be structured with a single, distinct unit chain of command.

Coordination

The benefits of the division of labor have been discussed above. There are, at the same time, costs associated with the division of labor.

Functionally differentiated units tend to develop independent, unit-level missions that may or may not conform to the overall mission of the organization. Management must seek to coordinate inter-unit operations to insure that all units remain focused on the organization's strategic mission. In its staff capacity, the crime analysis unit should serve as a structural means to facilitate inter-unit coordination. Crime analysts, as the department's information specialists, should be the primary center for identifying tactical and strategic problems, and ultimately for stimulating the discussions that lead to alternative responses.

To do so, however, the unit must develop sound, formal links with other units. We found that this was not the case. Links with other units are informal; interactions between units are primarily ad hoc. Although it appears that nearly three-

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quarters of large police departments have chosen to specialize the crime analysis function, the operations of the function

seem to be, at best, loosely integrated into the fabric of the organization. One is struck by the perception of many crime analysts that they must "sell" the unit to others in the department. Unit members appear insecure, reluctant to assert themselves, and generally unwilling to take their place in the organization.

Managers should consider designing formal, structural arrangements to link the crime analysis unit with logically connected operations and units (e.g., crime prevention, POP, planning, COMSTAT, etc.).

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Performance Measures

Measuring individual, unit, and organizational performance is critical to the management function. We found little evidence of formal performance measurement in the crime analysis units that we visited and spoke with in phone interviews. This deficiency appears to be linked to the

overall ad hoc nature of the relationship between crime analysis and the targets to whom they provide support. This relationship could best be described as tentative. Crime analysts, as noted above, feel the need to "sell" their product to other



members of the department. Analysts have no clear sense about which products are considered useful to the target. They produce, deliver, and through anecdotal evidence draw conclusions about the value of their work. Neither the analysts, nor the analysts' managers are clear about how and how well targets use their product. Individual-level quantitative and qualitative measures cannot be established until managers know what products the crime analysis unit should be producing.

Managers should design formal mechanisms to discover the relative value that endusers place in their products and thus begin the process to develop useful performance measures.

This must come through a systematic assessment of crime analysis output. Most units that we visited and spoke with by phone interview were aware of this deficiency and have made efforts to remedy it, but with only minor success.

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Human Resources

Job Description

Researchers routinely found formal job descriptions, most often drafted for use in job announcements, in the departments they visited and interviewed via telephone. They also discovered job descriptions in departmental general orders. The entry-level position generally called for a person with an undergraduate degree in one of the social sciences, familiarity with basic office software, and good verbal and written communication skills. Basic entry-level requirements for job announcement purposes seem to be reasonably well described, but frequently ignored the research skills often necessary for more complex analysis of underlying crime problems.

When it comes to articulating the routine, daily activities of a crime analyst, the findings were less encouraging. We found that only one of the departments that we visited or spoke with had a formal job manual for the crime analyst position. Several were in the process of drafting one. Nearly every analyst that we spoke with believed that a manual was necessary, but they also pointed out that drafting one was a complex and difficult task that required a collaborative effort between analysts and managers. The general absence of a formal manual further illustrates the ad hoc nature of crime analysis in American law enforcement and is a further indication that the function has not been given the careful,

deliberate consideration that it should. Thus, managers who oversee a specialized crime analysis function should construct a formal crime analysis position manual.

Selection

Selecting a civilian crime analyst is substantially different from selecting a sworn crime analyst. When it comes to civilians, most of the departments that we visited or spoke with began the process by posting a job announcement, often via the city or department website. Some departments hired civilians from within the city personnel system. In those that hired from outside the city system, the pattern generally consisted of some combination of basic written exam, oral board interview, and background investigation.

When selecting civilians, the most common complaint was the long processing time. With sworn members, the selection issues are different. One could reasonably assume that when a civilian applies for a non-sworn position he/she has an interest in the work. This may not be the case when the selection pool consists of sworn members. Because the position is specialized, it requires skills and training that may not be commonly found among the sworn population. If the position falls within the boundaries of a collective bargaining agreement, the selection process may be driven by standards that are unrelated to the job

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description (e.g., seniority). The appeal of the assignment may be unrelated to the work (e.g., steady watch, straight days, weekends off, etc.). This was the case in several of the departments that we spoke with in phone interviews. Members of the unit who did not have the desirable qualifications were selected because they bid successfully. Unit productivity suffered dramatically in these departments.

Another selection issue, especially important for agencies forming a crime analysis unit, concerns selection of the unit leader. The departments that we visited and spoke with in phone interviews, all of which scored high in all domains of crime analysis, agreed that the unit's success was directly related to the energy of the unit's leader, particularly a newly formed unit's first leader. These findings support the idea that the success of a crime analysis unit is linked to a leader, or "policy entrepreneur." A common characteristic found among the better units that we visited was a dynamic leader who was a powerful influence on the unit's success.

Thus, the selection process for civilian crime analysts should be as brief as possible to avoid losing qualified people to other jobs. Sworn crime analysts should be exempt from collective bargaining requirements for position assignments. Departments should carefully consider unit

leadership, especially when a new unit is being formed. A "policy entrepreneur" is vital to a new unit's success.

Career Path

Like the selection process, crime analyst career path issues revolve around the member's organizational status (i.e., civilian or sworn). A sworn member's

assignment to the crime analysis unit, in a technical sense, has no effect on his/her career path. Vertical movement for a sworn officer is predominantly a function of how well the officer performs on a promotional exam. Previous assignments have little, if anything, to do with promotion decisions.

Civilian status adversely impacts career opportunities in a law enforcement agency. Ordinarily, for civilian crime analysts, there is little opportunity for vertical movement and in almost all cases none for lateral movement. There are exceptions: In several California departments the

crime analyst may bid for other openings in municipal departments that have similarly defined positions (e.g., data processing). In one department, the crime analyst has been eligible for advancement to higher-ranking civilian administrative positions within the police department.

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Limited career mobility for civilians, according to some analysts that we spoke with, has resulted in high turnover. This is somewhat ironic: according to proponents of civilianization, turnover is reduced when sworn members are replaced by civilians. The tenure for sworn members in a crime analysis unit, the argument goes, is shortened through frequent transfers and promotions. We found that the absence of lateral and vertical opportunity for civilians may also result in high turnover.

To avoid turnover, policymakers should consider opening opportunities for civilian members, both laterally and vertically.

Managers will thus have to weigh the benefits of civilian crime analysts against the costs of high turnover due to a narrow career path. To avoid turnover, policymakers should consider opening opportunities for civilian members, both laterally and vertically.

Training

When it comes to crime analysis, training does not appear to be a high-priority issue. This is partially explained by the mission, either explicitly or implicitly articulated by managers and analysts. Police managers tend to emphasize tactical analysis. Most analysts that we spoke with resented engaging in activities that cannot be linked directly to the identification and apprehension of offenders. To this end, managers and analysts have placed great value in data manipulation (data bases and spreadsheet) and various presentation tools (e.g., word processing, graphics, digital

imaging, etc.). In many instances, training has been unnecessary because the people who have been drawn to the analyst

position have acquired the valued skills on their own.

When training is offered, according to the analysts that we interviewed, the courses provided are elementary and as a rule are geared toward the entry-level person. Relatively little

energy or inclination has been directed toward higher-level data analysis.

This type of training is especially necessary if the analysis function is going to become more sophisticated, considering that the entry-level requirement for analysts requires only the most basic understanding of statistical or social science research methods. Police have improved greatly their capacity to store, access, and disseminate data. However, the fact remains: according to our findings, crime analysts continue to "count" crime far more effectively than they "analyze" it. The training implications are obvious. In-service training

curriculum should be developed to train crime analysts to exploit the data in a more sophisticated and problem-oriented fashion.

Compensation

Compensation issues are similar to career path issues. When the crime analyst is a sworn member, we found that compensation was not an issue. Compensation for sworn members is solely a function of vertical



movement. A move to the crime analysis unit for a sworn member is always either a lateral transfer or a new assignment upon promotion. It has no bearing on compensation. We found that crime analysts, when they are sworn members, receive no additional pay based on the position.

When it comes to civilian members, compensation is an administrative issue and is closely tied to career path. The limits in vertical movement obviously limit compensation increases for civilians. In addition, however, we found that when compared to sworn members, civilians with similar responsibilities and who perform similar tasks (when compared both within and between departments) are paid substantially less. This is a condition that does not go unnoticed by civilian members. It would appear that an unintended

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consequence of cost savings associated with civilianization is high turnover.

Managers will have to weigh the benefits of civilian crime analysts against the costs of high turnover due to compensation disparities. If the benefits are sufficiently high, then policymakers should consider pay schedules that correspond to sworn positions with similar responsibilities and tasks. When the crime analyst is sworn, and if turnover due to voluntary requests for transfer are a problem, departments may consider pay increases tied to the position. This may provide an incentive for a good officer to remain in the position.



Operations

Hardware and Software Technology

Law enforcement agencies have improved their hardware and software inventories considerably over the past twenty years due to a variety of factors (more sophisticated personnel, advances in technology, affordability of hardware and software, etc.). Nearly every law enforcement agency, both big and small, has automated systems that are capable of storing and processing large data sets. Judging from the surveys (mail and phone) and our interviews with crime analysis personnel across the country, we found that city and county government, as well as federal agencies, are providing law enforcement managers with the necessary financial resources to equip their departments with basic automated systems.

These encouraging findings aside, we did discover that when it comes to hardware and software, system planning is weak. Many of the departments that we visited and the analysts that we spoke with, complained of poorly planned systems that have been developed piecemeal over time. This is not a problem confined to law enforcement; information system planning is a problem faced by a wide range of public and private sector organizations. The overall weaknesses in strategic planning by law enforcement agencies aggravate the planning problems associated with information systems

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development. Rational, comprehensive strategic planning has not been a part of the police administrative culture. When this is found in any organization, public or private, weaknesses in adapting to changing technology are likely to follow.

Law enforcement agencies should construct a comprehensive, time-bounded rational information systems plan. If the department is engaging in strategic planning, then the information systems plan should be specifically

assigned to an action plan team. If the department does not engage in formal strategic planning, then a distinct information systems plan should be developed, including an articulated mission, goals, objectives, and tasks. A team should be formed to construct the plan and oversee its implementation.

Output: Tactical

As we have noted several times throughout this report, analysts and managers place a high value on tactical analysis. There appears to be a view, commonly held by crime analysis personnel, that their first priority is to provide support for field officers, whose primary responsibility is to identify and apprehend offenders. This belief is consistent with an emphasis on crime control, indicative of the professional model of policing.

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Those who have been responsible for charting the course for crime analysis have directed the deployment of resources to a narrowly defined "crime control" model.

Owning and using advanced hardware and software has been held up by crime analysts as evidence of a more sophisticated, professional, specialized function. One cannot argue with the fact that data are managed substantially more efficiently and effectively than, say, twenty years ago. If the ultimate aim is to be able to collect more data, access it more easily, and count it better, then we have arrived.

If, however, the aim is to "analyze" the data through using more sophisticated methodologies, that is, making the best use of the analytic tools available to solve community problems, then we clearly have not arrived. In the end, the substance of tactical output that crime analysis units currently produce is remarkably similar to what was produced twenty years ago. Most of what we found on briefing room bulletin boards were various notices directed toward patrol and investigative units about individual offenders (wanted, known to be working, recently released, etc.). The turnaround time for release of these notices is faster than twenty years ago because of desktop publishing software and digital photography, but the substance is essentially the same. We also found pin maps in various places, also distributed primarily to line officers. These also are

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more easily produced and noticeably more current than twenty years ago because of the advances in geographical information systems, but they too are essentially the

same. And lastly, we saw an occasional pattern or series notice, sometimes discovered by the crime analysis unit and sometimes discovered by a field unit, normally investigations.

There was sporadic evidence of more sophisticated analysis (e.g., geographic profiling, point-pattern analysis, standard deviation-based early warning systems, etc.). Applied researchers are working on advanced methodologies (particularly crime mapping applications) directed toward tactical analysis. However, the evidence demonstrated that

these advanced methods were more often the exception than the rule. As we have noted above, counting crime dominates current tactical analysis. Analysts are expected to either know or have the capacity to learn basic PC skills sufficient to operate the machine, manage data sets (data file construction and manipulation, querying, report construction, etc.), generate digital maps (and work with data in that context), and publish notices and alerts. Higher-level research design and methodologies, including intermediate-level statistics, are not demanded, nor are they currently performed by crime analysts. In short, crime analysis is, by all appearances, underutilizing the vastly improved data sets that are now available.



Law enforcement policymakers should demand higher-level pre-service and in-service training for crime analysts that will equip them with higher-order analytic skills. Law enforcement policymakers should enter into partnerships with academic institutions, especially applied researchers, to develop approaches and methods to utilize law enforcement data sets for problem analysis purposes.

Output: Strategic

Law Enforcement Assistance Administration (LEAA) funding in the 1970s provided the first concentrated effort to support the creation of formal crime analysis units. Crime analysis was viewed as a necessary adjunct to the fulfillment of LEAA's primary goal (i.e., to encourage and facilitate formal, comprehensive, rational planning in the criminal justice system). The need for rational planning has not changed. If anything, the current model of policing stresses the value of formal strategic planning more than ever. Strategic planning requires the support of specialized personnel that are skilled in research design and methods.

Site visits and phone interviews indicated that strategic analysis of the sort that supports strategic planning is rarely conducted. Several of the sites that we visited did dedicate crime analysts to

strategic analysis tasks, but this was normally limited to annual reporting and staffing allocation. We rarely found crime analysis personnel formally linked to the department's long-range planning process. The data do not permit us to speculate about the reasons for this apparent underutilization of the crime analysis unit; however, several possibilities occur as explanations. First, the emphasis on tactical crime analysis is consistent with the professional policing model, the mission of which is driven by crime control and offender apprehension. Second, long-range, strategic planning has not been part of the organizational fabric of policing. Although the current model of policing encourages police managers to embrace strategic planning, it has simply not taken hold as yet. Therefore, since the demand for strategic analysis is low, we would expect to find it subordinated to tactical crime analysis, which we did.

This suggests that managers who have adopted formal long-range planning should consider creating formal links with their crime analysis unit and develop practices that will stimulate strategic analysis. For example, the crime analysis unit may take responsibility for conducting an analysis of stakeholder beliefs and opinions that would help to shape departmental goals and objectives.

Law enforcement policymakers should demand higher-level pre-service and in-service training for crime analysts that will equip them with higher-order analytic skills. Law enforcement policymakers should enter into partnerships with academic institutions, especially applied researchers, to develop approaches and methods to utilize law enforcement data sets for problem analysis purposes.

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Conclusion

Ask a police officer who entered the profession twenty or thirty years ago to list the most important changes in policing during his or her tenure. You would certainly find some mention of the remarkable advances in the tools now available to process data and transform it into useful information. More crime data are collected. The data that are collected cover a broader range of characteristics of the criminal incident. Most of the data that we collect are stored in digital format, thus providing the ability to more easily access and manipulate the data. The tools to analyze the data are more sophisticated and getting more user-friendly by the day. Display of the findings of the analysis is more intuitive and is more easily understood by a wider audience. Given these remarkable changes, one might expect that the analytic product is likewise more advanced and has led to correspondingly more sophisticated police tactical and strategic decision outcomes and solutions to chronic crime problems.

We believe, unfortunately, that this is not the case. No one would argue that we do not collect, store, and count more effectively and efficiently than we ever have. It is quite another matter, however, when the criteria for high-quality crime analysis is "analysis." The technology is there; we just do not seem to be maximizing the potential that those tools hold. The data are answering the questions that we pose: How much crime do we have? Where is that crime? Is that crime clustering? Is that crime moving? Are there clusters of crime that we can attribute to an individual or group of individuals? These are all relevant questions and certainly fall within the police mandate. What we must ask is, are these the only questions that we should be asking? The answer, we would

argue, is no. The more important question, that is yet to be answered, is, What are the questions that we should be asking? Community policing directs us to questions focusing on community level problems. What are the problems in the community? What are the causes of those problems? What types of responses are more effective in providing solutions to those problems? Undeniably these questions are much more difficult to answer. However, it is possible to develop more complex understandings of community problems and to develop solutions to them, often involving collaborative partnerships with other government agencies and community members. Crime analysts could be one of the driving forces behind developing this deeper understanding of problems and possible solutions to them.

Some of the weaknesses of the crime analysis function may be addressed by simple structural fixes. We have tried in this guide to point out some of the more obvious. Resolving the management and operational issues that were discussed above should help. However, crime analysis, in our view, will not realize its true potential until such time as the core issues are resolved. The proponents of community policing have been hammering away at the need to change the cultural underpinnings of policing. This study suggests how the culture can and has retarded the potential of one very important police operation.

We continue to define the police problem in excruciatingly narrow terms, which results in excruciatingly narrow crime analysis products. Analysts produce reports that support the essentially reactive nature of the police "crime control" model. The police problem is not typically defined in a manner



that seeks to understand the patterns and relationships in the collected data that would explain the criminal or disorder problem in a fashion that would suggest proactive police responses. The dominant crime analytic activity is counting crime and providing offender information to field operations personnel. While departments claim to have adopted "community policing," police managers continue to tenaciously (some might argue stubbornly) define police field operations in terms of crime control not problem-oriented, solution-focused terms.

How might we go about resolving this problem? It would seem unreasonable, and unlikely, to simply insist that the police change their culture to accommodate the broader mandate suggested by the community policing types. Until such time as the police can be shown how their data can be better utilized to support operations associated with the broader mandate, one can only expect the police to prefer the status quo. The proverbial ball, it would seem, is in the court of those who have for years criticized police strategies and tactics. For the past fifteen years academics have been given unprecedented access to police data. Partnerships have flourished between police and academics. Yet, when it comes to practical applications of data analysis to inform problem analysis, academics have not been up to the challenge. It is one thing to say that the police should focus their attention on understanding the factors behind patterns and relationships in the police data to better explain the complexities of the criminal and disorder

incident. It is quite another thing to show how.

One should not conclude, however, that the entire burden for developing a more sophisticated crime analysis function should rest on the shoulders of academics. We would hope that contemporary police managers can bring themselves to think outside the box. Advances in information processing, and hopefully advances in data analysis methods, will provide the police with unprecedented opportunities to broaden their mission and mandate in a

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manner that may well impact the nature and extent of crime, not merely react to its occurrence. This will require police policymakers to critically assess their current operations and management paradigm. They will have to permit themselves to be open to new ideas, methods, and practices and provide employees within the department with the necessary skills, resources and time to conduct such problem analytic tasks. It will not be enough for the academics, or anyone for that matter, to provide the tools and techniques; police managers will have to understand and appreciate the value of these new tools and techniques and demand the products that they imply.



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